

Application No. 10/693,868
Response to the Office Action dated November 23, 2004

Patent
Attorney Docket No. 89003-11

I. AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions of claims in the application.

Listing of Claims:

1. (Currently amended) A controller suitable for use in controlling components in a bathing unit, said controller comprising:
 - a. a controller body;
 - b. a plurality of connectors positioned on said controller body, each connector in said plurality of connectors being adapted for providing electrical power to a respective bathing unit component, each connector of said plurality of connectors being adapted for matingly engaging a complementary connector associated to a respective bathing unit component, each connector in said plurality of connectors including:
 - i. a set of contact elements arranged in a common configuration, wherein;
 1. a first subset of said set of contact elements is adapted for generating a power signal characterized by a first current-voltage combination; and
 2. a second subset of said set of contact elements is adapted for generating a power signal characterized by second current-voltage combination;
 - c. a control circuit positioned within said controller body, in use said control circuit being adapted for selectively providing electrical power

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to respective bathing unit components through the plurality of connectors.

2. (Original) A controller as defined in claim 1, said controller further comprising a plurality of key members connected to respective connectors in the plurality of connectors so as to allow bathing unit components having complementary key members to be connected to connectors having key members matching the complementary key members.
3. (Original) A controller as defined in claim 1, wherein said set of contact elements includes a plurality of subsets of contact elements characterized by respective current-voltage combinations.
4. (Original) A controller as defined in claim 2, wherein said key members are adapted for releasably engaging said connectors.
5. (Cancelled) ~~A controller as defined in claim 1, wherein said controller comprises a control circuit adapted for controlling a supply of power to said plurality of connectors.~~
6. (Currently amended) A controller as defined in claim 1 ~~claim 5~~, wherein each of said connectors is adapted to acquire an actuated state and a non-actuated state, when in the actuated state a connector being adapted for providing electrical power to a bathing unit component, when in the non-actuated state a connector being prevented from providing electrical power to a bathing unit component, said control circuit being adapted for:
 - a. receiving control signals associated to components in the bathing unit;
 - b. causing selected ones of the plurality of connectors to acquire either one of the actuated state and the non-actuated state on the basis of the control signals.

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7. (Original) A controller as defined in claim 1, wherein:
- said first subset of said set of contact elements is adapted for establishing electrical connections with complementary contact elements associated to a first bathing unit component such as to release a signal characterized by the first current-voltage combination; and
 - said second subset of said set of contact elements is adapted for establishing electrical connections with complementary contact elements associated to a second bathing unit component such as to release a signal characterized by the second current-voltage combination.
8. (Original) A controller as defined in claim 1, wherein said set of contact elements includes a port for transmitting data to a bathing unit component.
9. (Original) A controller as defined in claim 8, wherein said port is adapted for receiving data from a bathing unit component.
10. (Original) A controller as defined in claim 9, wherein said port is an analog port.
11. (Original) A controller as defined in claim 8, wherein said port is in the form of a serial link.
12. (Currently amended) A connector suitable for use in a bathing unit controller for providing electrical power to a bathing unit component, said connector including a set of contact elements, wherein:
- a first subset of said set of contact elements is adapted for generating a power signal characterized by a first current-voltage combination; and
 - a second subset of said set of contact elements is adapted for generating a power signal characterized by second current-voltage combination;

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said connector being adapted for matingly engaging a complementary connector associated to a bathing unit component, when said connector is in use in a bathing unit controller, said connector providing power to the bathing unit component associated to the complementary connector.

13. (Original) A connector as defined in claim 12, wherein:

- a. said first subset of said set of contact elements is adapted for establishing electrical connections with complementary contact elements associated to a first bathing unit component such as to release a signal characterized by the first current-voltage combination; and
- b. said second subset of said set of contact elements is adapted for establishing electrical connections with complementary contact elements associated to a second bathing unit component such as to release a signal characterized by the second current-voltage combination.

14. (Currently amended) A controller suitable for use in controlling components in a bathing unit, said controller comprising:

- a. a controller body;
- b. a plurality of connectors positioned on said controller body for supplying electrical power to a set of bathing unit components;
- c. a plurality of key members adapted to be connected to respective connectors in the plurality of connectors, the plurality of connectors allowing bathing unit components having complementary key members to be connected to connectors having key members matching the complementary key members;
- d. a control circuit positioned within said controller body, in use said control circuit being adapted for selectively providing electrical power to respective bathing unit components through the plurality of connectors.

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15. (Original) A controller as defined in claim 14, wherein said pluralities of key members are adapted for releasably engaging said connectors.
16. (Original) A controller as defined in claim 14, wherein said plurality of key members, when engaging said plurality of connectors, defines a bathing unit component connection pattern.
17. (Currently amended) A controller as defined in claim 16, wherein said ~~controller comprises a~~ control circuit ~~adapted~~ is adapted for controlling a supply of power to said plurality of connectors in accordance with the bathing unit component connection pattern.
18. (Currently amended) A controller as defined in claim 14, wherein each of said connectors is adapted to acquire an actuated state and a non-actuated state, when in the actuated state a connector being adapted for providing electrical power to a bathing unit component, when in the non-actuated state a connector being prevented from providing electrical power to a bathing unit component, said ~~controller including a~~ control circuit being adapted for:
- a. receiving control signals associated to components in the bathing unit;
 - b. causing selected ones of the plurality of connectors to acquire either one of the actuated state and the non-actuated state on the basis of the control signals.
19. (Original) A controller as defined in claim 14, wherein each connector in said plurality of connectors includes:
- a. a set of contact elements arranged in a common configuration, wherein;
 - i. a first subset of said set of contact elements is adapted for generating a power signal characterized by a first current-voltage combination; and

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- ii. a second subset of said set of contact elements is adapted for generating a power signal characterized by second current-voltage combination.

20. (Original) A controller as defined in claim 19, wherein said set of contact elements includes a plurality of subsets of contact elements characterized by respective current-voltage combinations.

21. (Original) A controller as defined in claim 19, wherein:

- a. said first subset of said set of contact elements is adapted for establishing electrical connections with complementary contact elements associated to a first bathing unit component such as to release a signal characterized by the first current-voltage combination; and
- b. said second subset of said set of contact elements is adapted for establishing electrical connections with complementary contact elements associated to a second bathing unit component such as to release a signal characterized by the second current-voltage combination.

22. (Currently amended) A keying system suitable for use in a bathing unit controller, the bathing unit controller including a connector adapted for providing electrical power to a bathing unit component, the bathing unit component including an electrical plug, said keying system comprising:

- a. a key member adapted for engaging the connector;
- b. a complementary key member adapted for engaging the electrical plug, so as to enable the electrical plug and the connector to establish an electrical connection when the key member ~~and then~~ and the complementary key member match such as to allow the connector to provide power to the bathing unit component through the electrical plug.

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23. (Original) A keying system as defined in claim 22, wherein said key member includes descriptive indicia for facilitating location of a complementary key member matching the key member.
24. (Original) A keying system as defined in claim 22, wherein said descriptive indicia includes alpha-numeric characters.
25. (Original) A keying system as defined in claim 22, wherein said key member includes color indicia for facilitating location of a complementary key member matching the key member.
26. (Original) A keying system as defined in claim 22, wherein said key member is adapted for releasably engaging the connector.
27. (Original) A keying system as defined in claim 22, wherein said complementary key member is adapted for releasably engaging the electrical plug.
28. (Currently amended) A bathing unit component suitable for use in a bathing unit having a controller, the controller comprising a plurality of connectors for supplying electrical power, said bathing unit component comprising a plug member having a complementary key member connected to said plug member so as to allow the bathing unit component to be connected to a connector on the controller having a matching key for providing power to the bathing unit component through the plug member.
29. (Currently amended) A bathing unit system comprising in ~~in~~ combination:
- a. a controller suitable for use in controlling components in a bathing unit, said controller comprising:
 - i. a controller body;

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ii. a plurality of connectors positioned on said controller body, each connector in said plurality of connectors being adapted for providing electrical power to a respective bathing unit component, each connector of said plurality of connectors being adapted for matingly engaging a complementary connector associated to a respective bathing unit component, each connector in said plurality of connectors including:

1. a set of contact elements arranged in a common configuration, wherein:

a. a first subset of said set of contact elements is adapted for generating a power signal characterized by a first current-voltage combination; and

b. a second subset of said set of contact elements is adapted for generating a power signal characterized by second current-voltage combination;

iii. a control circuit positioned within said controller body, in use said control circuit being adapted for controlling a supply of electrical power to respective bathing unit components through the plurality of connectors;

b. a plurality of bathing unit components adapted to engage respective ones of one of the plurality of connectors.

30. (Original) A combination as described in claim 29, wherein said combination comprises:

a. a plurality of key members adapted for engaging said plurality connectors;

b. a plurality of complementary key members adapted for engaging respective bathing unit components so as to allow the bathing unit components to be connected to connectors having a matching key.

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31. (Original) A combination as defined in claim 29, wherein said set of contact elements includes a plurality of subsets of contact elements characterized by respective current-voltage combinations.
32. (Original) A combination as described in claim 30, wherein said key members are adapted for releasably engaging said connectors.
33. (Cancelled) ~~A combination as described in claim 29, wherein said controller comprises a control circuit adapted for controlling a supply of power to said plurality of connectors.~~
34. (Currently amended) A combination as described in claim 29 ~~claim 33~~, wherein each of said connectors is adapted to acquire an actuated state and a non-actuated state, when in the actuated state a connector being adapted for providing electrical power to a bathing unit component, when in the non-actuated state a connector being prevented from providing electrical power to a bathing unit component, said control circuit being adapted for:
- receiving control signals associated to components in the bathing unit;
 - causing selected ones of the plurality of connectors to acquire either one of the actuated state and the non-actuated state on the basis of the control signals.
35. (Original) A combination as described in claim 29, wherein:
- said first subset of said set of contact elements is adapted for establishing electrical connections with complementary contact elements associated to a first bathing unit component of said plurality of bathing unit components such as to release a signal characterized by the first current-voltage combination; and
 - said second subset of said set of contact elements is adapted for establishing electrical connections with complementary contact

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elements associated to a second bathing unit component of said plurality of bathing unit components such as to release a signal characterized by the second current-voltage combination.

36. (Original) A combination as described in claim 29, wherein said plurality of bathing unit components includes a heating module.

37. (Original) The combination described in claim 29, wherein said plurality of bathing unit components includes a pump.

38. (Currently amended) A controller suitable for use in controlling components in a bathing unit, said controller comprising:

- a. a controller body;
- b. a plurality of connector means positioned on said controller body for supplying electrical power to a set of bathing unit components;
- c. a plurality of key means connected to respective connector means in the plurality of connector means so as to allow bathing unit components having complementary key members to be connected to connector means having key means matching the complementary key members;
- d. control circuit means positioned within said controller body, in use said control circuit means being adapted for selectively providing electrical power to respective bathing unit components through the plurality of connectors means.

39. (New) A controller for use in controlling bathing unit components in a bathing unit system, said controller comprising:

- a. a controller body;
- b. a plurality of connector interfaces positioned on said controller body, each connector interface of said plurality of connector interfaces being adapted for matingly engaging a complementary connector associated

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to a respective bathing unit component, at least some connector interfaces of said plurality of connector interfaces including descriptive indicia, the descriptive indicia providing guidance in locating corresponding complementary connectors associated to bathing unit components;

- c. a control circuit positioned within said controller body, in use said control circuit being adapted for selectively providing electrical power to respective bathing unit components through the plurality of connector interfaces.

40. (New) A controller as defined in claim 39, wherein the descriptive indicia includes alpha-numeric characters.

41. (New) A controller as defined in claim 40, wherein the descriptive indicia includes color indicia.

42. (New) A controller as defined in claim 41, wherein the color indicia allow effecting connections between the plurality of connector interfaces and the complementary connectors associated to bathing unit components on the basis of a color code.

43. (New) A controller as defined in claim 39, wherein said controller body includes a back surface and a front surface generally opposed to said back surface, said plurality of connector interfaces being positioned on the front surface of said controller body.

44. (New) A controller as defined in claim 39, wherein said control circuit includes printed conductor traces, at some of said connector interfaces establishing a direct contact with the printed conductor traces.